

(No Model.)

2 Sheets—Sheet 1.

W. M. STEINLE.

CIGAR MACHINE.

No. 354,491.

Patented Dec. 14, 1886.

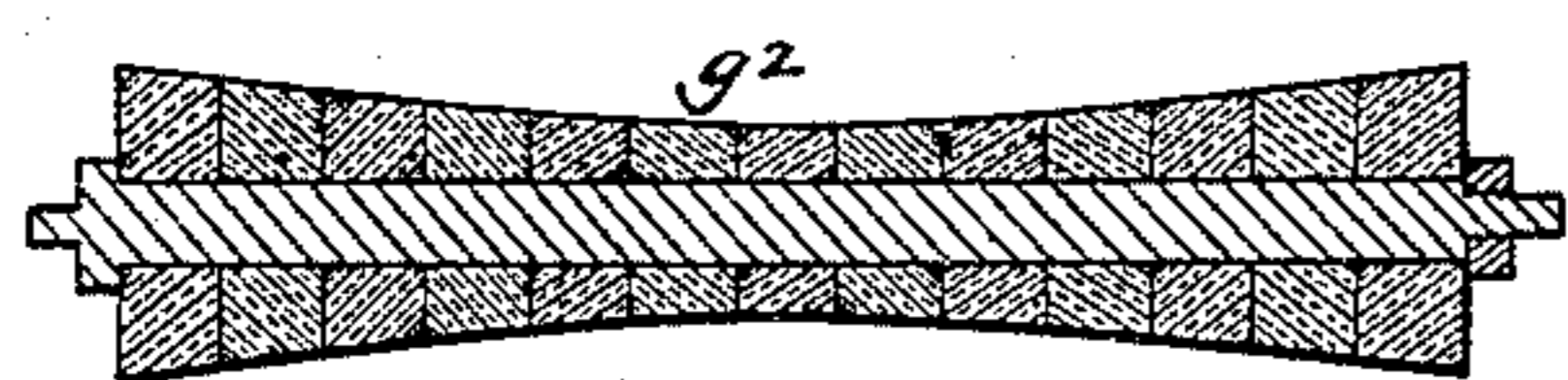


Fig. 7.

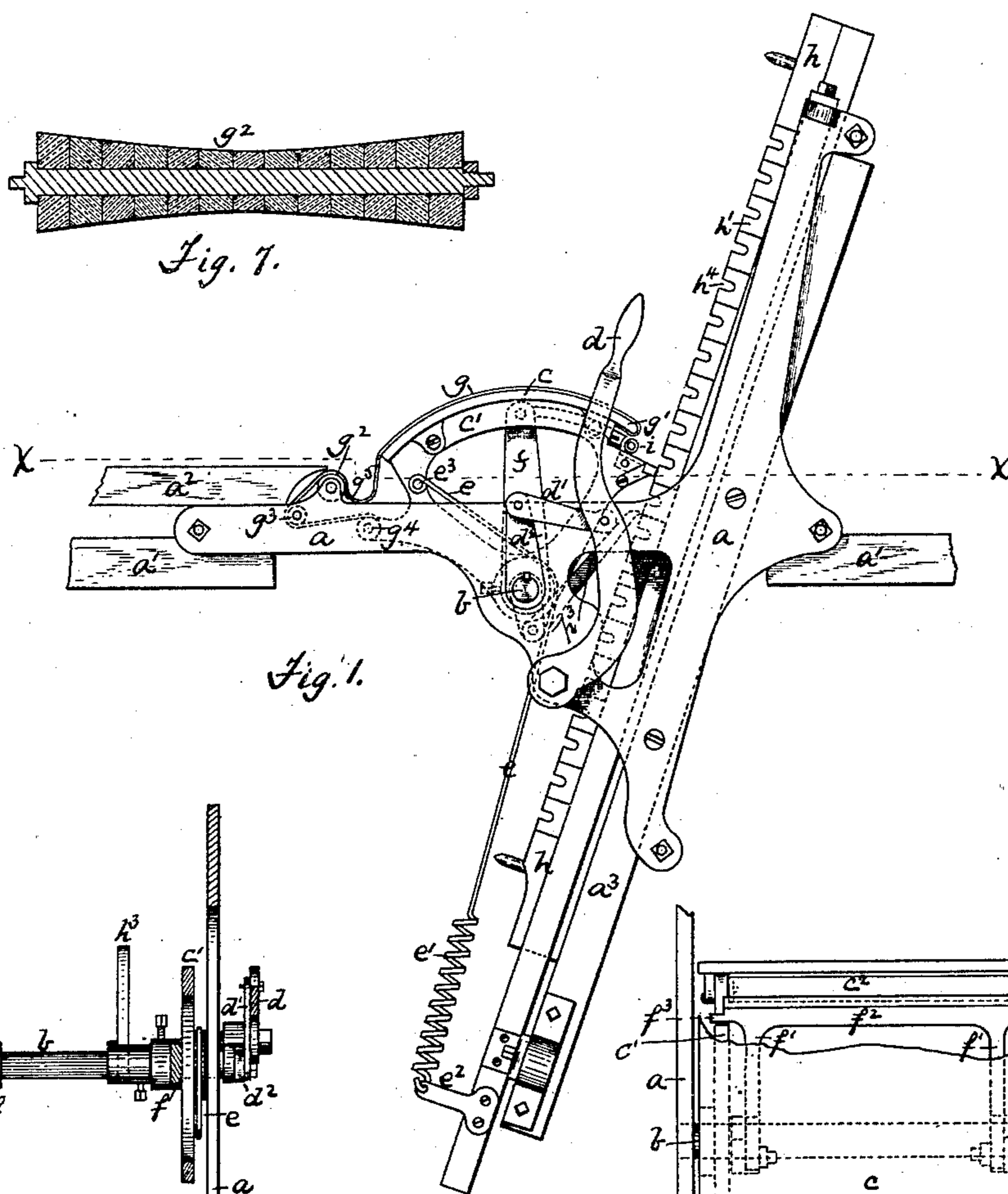


Fig. 1.

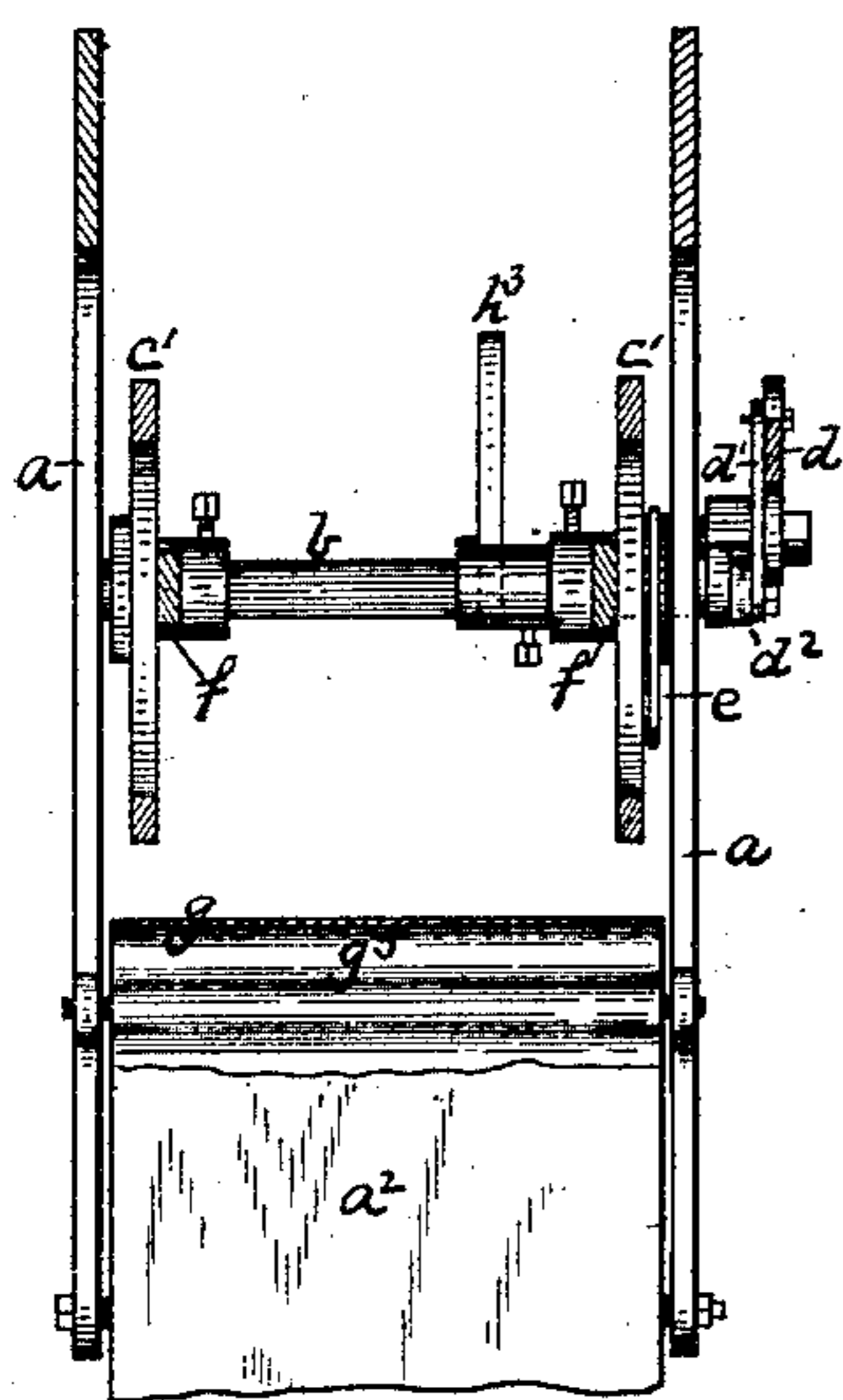


Fig. 2.

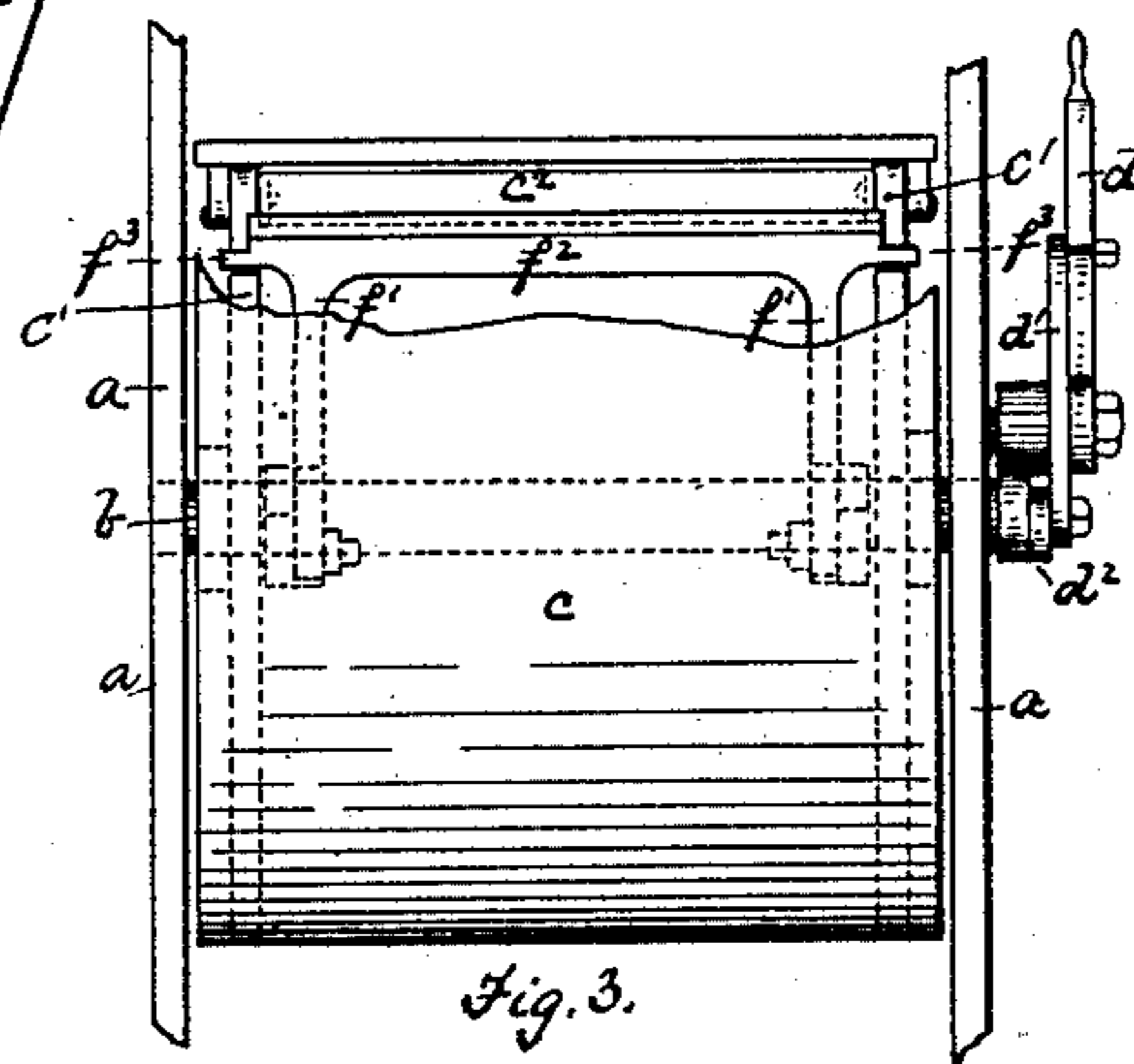


Fig. 3.

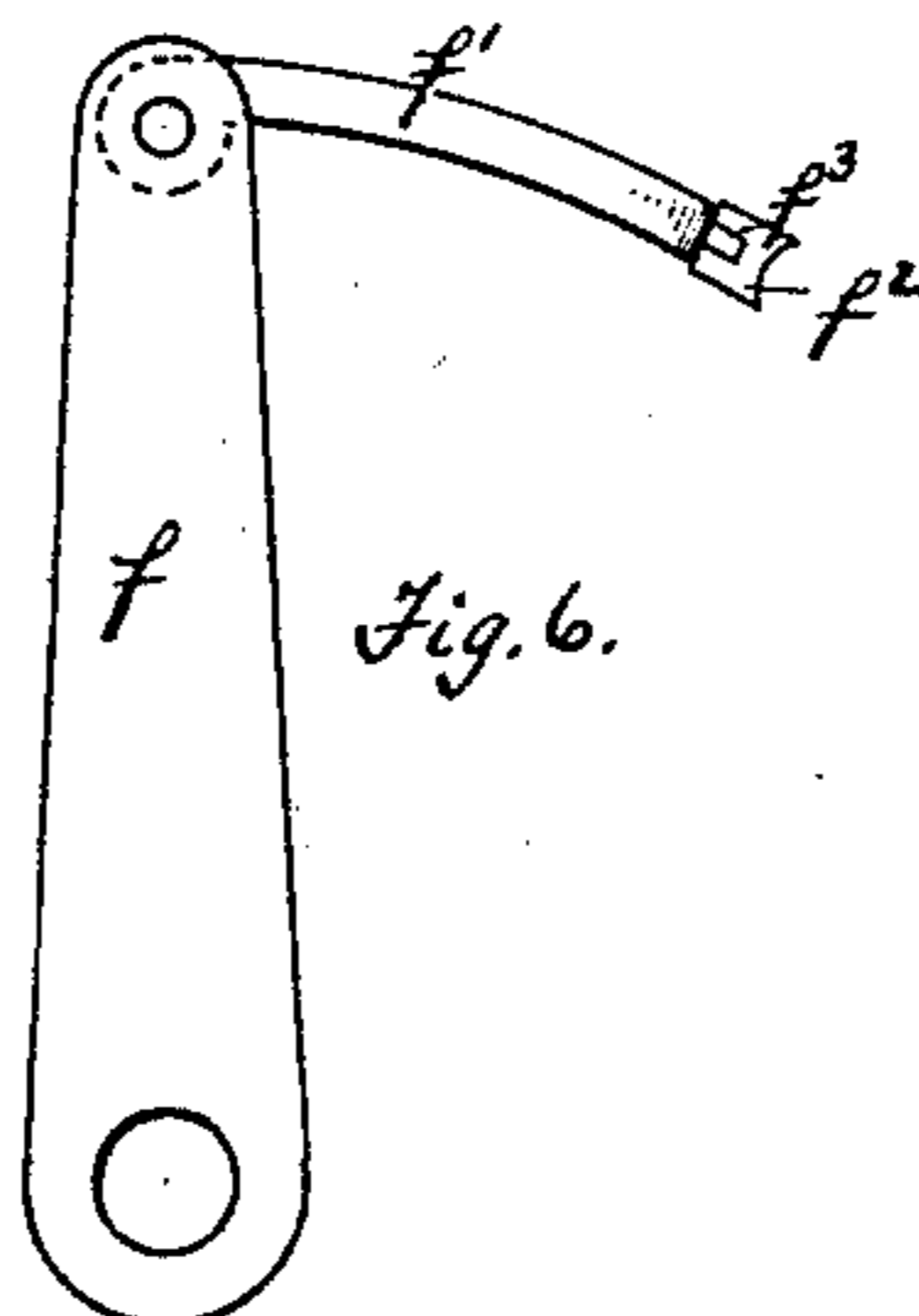


Fig. 6.

Witnesses—

W. B. Corwin,
J. A. Burns.

Inventor

William M. Steinle
by his attys.
Bakewell & Kerr

(No Model.)

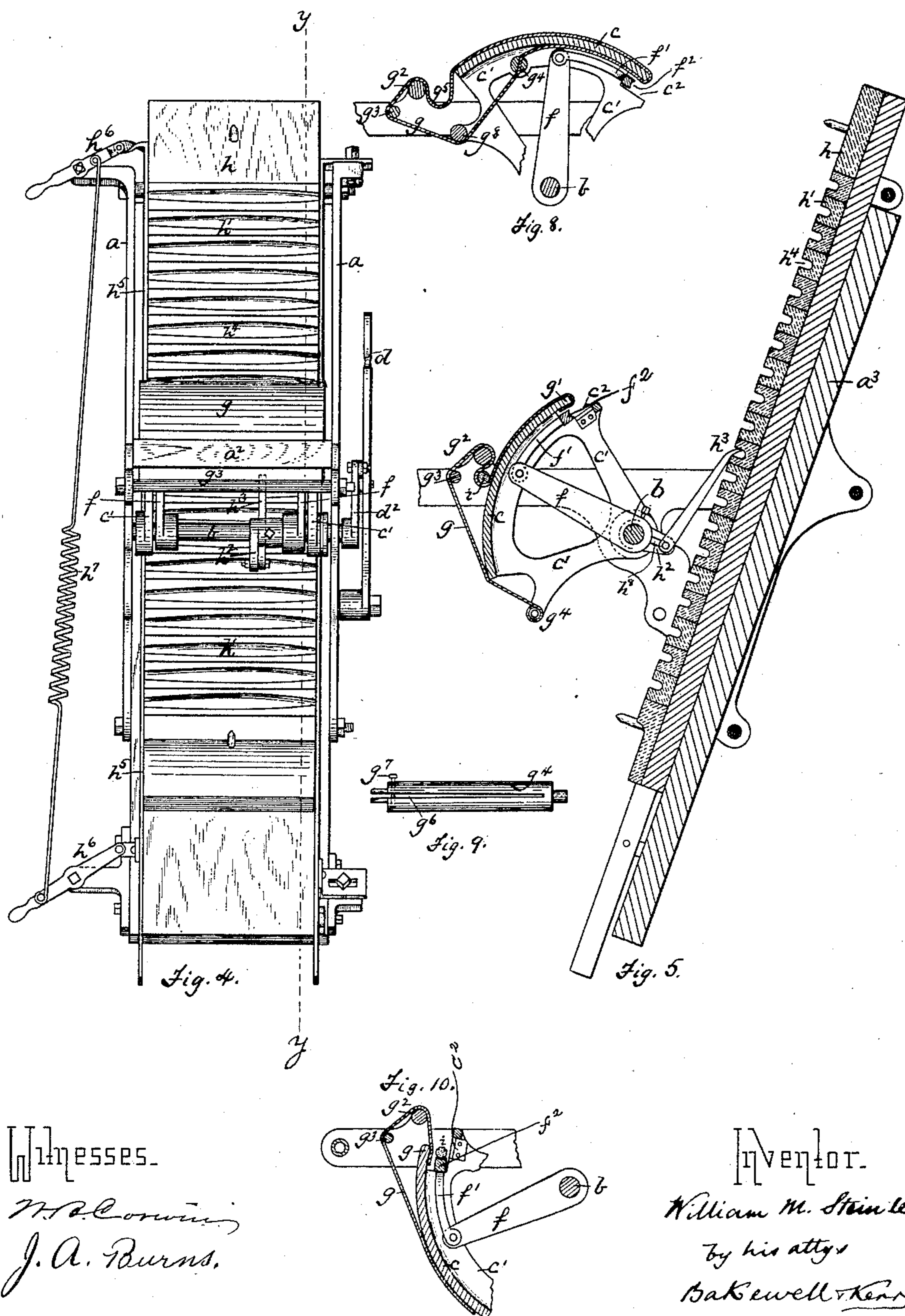
2 Sheets—Sheet 2.

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M. R. Corwin
J. A. Burns.

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UNITED STATES PATENT OFFICE.

WILLIAM M. STEINLE, OF ALLEGHENY CITY, ASSIGNOR TO THE RALEIGH MANUFACTURING COMPANY, OF PITTSBURG, PENNSYLVANIA.

CIGAR-MACHINE.

SPECIFICATION forming part of Letters Patent No. 354,491, dated December 14, 1886.

Application filed September 3, 1884. Serial No. 142,100. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM M. STEINLE, of Allegheny City, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Cigar-Machines; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a side elevation of my improved cigar-bunching machine. Fig. 2 is a section on the line xx of Fig. 1. Fig. 3 is a plan view of a portion of the machine. Fig. 4 is a front elevation. Fig. 5 is a vertical section on the line yy of Fig. 4, showing the bunching devices in another position. Figs. 6, 7, 8, 9, and 10 are detail views.

Like letters of reference indicate like parts wherever they occur.

The purpose of my invention is to make what is called the "bunch" of a cigar—that is, the body of the cigar without the external wrapper.

The frame of the machine consists, mainly, of two side pieces, a , in which the operative parts are mounted, and which are in turn supported upon a suitable table, a' . Journaled in the side pieces, a , is a shaft, b , upon which is mounted loosely a frame, c' , which carries a segmental roller-plate, c . An oscillating or vibrating motion is given to the roller-plate c in one direction by a lever, d , through link d' , crank d^2 , shaft b , arms $f f'$, and pins f^3 , and in the reverse direction by a spring, e . The lever d is pivoted to the frame a , and is connected with the shaft b , so as to turn it, by means of a pivoted link, d' , which in turn is pivoted to a crank-arm, d^2 , which is keyed to the shaft b . Projecting from the shaft b , inside of the frame a , are two arms, f , which are rigidly secured to the shaft, so as to be moved when the latter is turned. On the ends of the arms f are other arms f' , the outer ends of which are connected together by a cross-bar, f^2 , formed, preferably, with a grooved or concave face, and near the end of each of the arms f' , adjacent to the cross-bar f^2 , is a laterally-projecting pin, f^3 . These pins f^3 bear on the

edges of the frame c' . (See Fig. 3.) The frame c' of the plate c is pivoted loosely on the shaft b ; but the pins f^3 , projecting beyond the ends of the cross-bar f^2 , catch on the inner edges of the frame c' , so that when the lever d is drawn forward by the workman the plate c will be moved in the same direction by means of the arms $f f'$ and pins f^3 . (See Figs. 5 and 10.) When the lever d is moved in the opposite direction, it simply releases the plate c , and thereby permits the spring e to act on the frame c' and restore the plate c to its normal position. (See Fig. 1.)

The spring e consists of a rod having a strong coil, e' , below the shaft b , one end being attached to the side of the frame a^3 , as at e^2 , and the other to the frame c' at e^3 , the rod being bent over the shaft b between the coil e' and the point of attachment e^3 . This spring is so tensioned that when the plate c is drawn forward by the operator, occupying a position in the rear of the table a^2 , the spring is tightened, so that when the lever d is released it will throw the plate c back to its normal position.

Extending over the face of the plate c is a loose belt, g , which in width is equal to or slightly in excess of the length of the cigar-bunch to be made. One end of this belt is fastened to the edge of the plate c at g' , and the other end, after passing over the rolls g^2 and g^3 , is fastened to a tension-roll, g^4 , the rolls g^2 and g^3 being journaled in the frame a and the roll g^4 in the frame c' . The belt g is of sufficient length to form a bight or loop, g^5 , for the reception of the tobacco between the edge of the plate c and the side of the roll g^2 .

Secured between the two side pieces, a , is the inclined back a^3 , in which is placed a sliding mold, h , containing any desired number of blocks h' , for receiving the cigar-bunches from the machine. Secured rigidly to the rear side of the shaft b is a short arm, h^2 , and pivoted thereto is a pawl, h^3 , the end of which plays over the surface of the molds h' . When the lever d is drawn in the direction of the table a^2 , the end of the pawl h^3 , catching in one of the molds h' , pushes the sliding mold h up a certain regulated distance, so as to bring the

molds one by one into position to receive a finished bunch from the bunching-frame. The mold h is retained in its proper position by means of the tension-plate h^5 , which bears
 5 against one edge, and is capable of retraction for the purpose of removing the mold. This tension-plate is caused to have an elastic bearing against the edge of the mold h by means of the pivoted levers h^6 , which are caused to
 10 press against it at opposite ends by means of the spring h^7 . When it is desired to remove the frame h , the levers h^6 are turned so as to throw the points of attachment of the spring h^7 over the centers of the pivots of the levers.
 15 When the mold is restored to position, the levers are turned the other way, so as to cause the pressure of the spring h^7 to act inwardly against the tension-plate h^5 .

Thus constructed and arranged, the operation of my improved machine is as follows:
 20 The parts being in the position shown in Fig. 1, the tobacco which constitutes the filler of the cigar is placed in the loop or bight g^5 and the binder or inner wrapper is placed on top.
 25 The workman, occupying a position back of the table a^2 , then draws the lever d toward him, whereupon the link d' , through crank-arm d^2 , keyed to shaft b , arms $f f'$, and pins f^3 , take up the loosely-mounted oscillating frame
 30 c' , thereby causing the plate c to move downward past the roll g^2 , so as to cause the belt g to close around the bunch of tobacco i , as shown in Fig. 5, one end of the belt being fastened to the roll g^4 . The movement of the
 35 frame c' draws the belt g around the bunch i and over the surfaces of the rolls $g^2 g^3$, causing the bunch to be rotated or rolled in the bight g^5 in such a manner that the filler is encircled by the binder and a cylindrical bunch
 40 of the proper size and form is produced. The vibration of the plate c causes the point g' to pass below the roll g^2 and to take up the slack of the belt g , so as to eject the bunch therefrom, as shown in Fig. 10. The edge of the
 45 frame c' , which projects beyond the edge g' of the plate g , is covered with a cross strip or plate, c^2 , which forms a ledge, upon which the bunch i may rest as the frame is being restored to its normal position by the action of the
 50 spring e , as shown in Fig. 1. When the bunch i is ejected from the belt g , it falls on the concave edge of the bar f^2 , as shown in Fig. 10. The workman then moves the lever d back to its normal position, as shown in Fig. 1, the plate
 55 and its frame c' being caused to move with or follow the lever by the spring e . After the plate c comes to its normal position, as shown in Fig. 1, the workman continues to push the lever d toward the mold h until the cross-bar
 60 f^2 pushes the bunch off of the plate c^2 into the recess h^4 of one of the blocks h . This continued movement of the cross-bar or ejector independently of the oscillating frame c' is possible, because the oscillating frame is
 65 loosely mounted on the shaft b . The next forward motion of the lever d in forming the next bunch causes the pawl h^3 to push the

mold h up one space, so as to bring the next block, h' , in position for receiving the next finished bunch from the bunching mechanism. 70
 The roll g^2 is made up of a central shaft and disk-like sections, as shown in Fig. 7, and is of the proper shape to give the desired form to the bunch. The pawl h^3 is adjustable so as to give a longer or shorter movement to the
 75 mold-frame h by means of a slot, h^8 , in the arm h^2 ; or, if desired, this slot may be made in the pivoted end of the pawl.

In Fig. 9 I show the construction of the tension-roller g^4 . This roller is provided with a 80 slot, g^6 , in which the end of the belt g is secured by means of the clamp screw g^7 .

In Fig. 8 I show the use of a continuous belt, g . In this case the guide-roll g^8 is substituted for the roll g^4 and the latter put in 85 another position, and both ends of the belt are secured in the slot g^6 . An advantage of this construction consists in the fact that if the belt g becomes worn at the bight g^5 it can be shifted so as to bring another portion into 90 that position, and thereby distribute the wear over the whole surface.

A great advantage of my machine is its simplicity of construction and the fact that it is under the perfect control of the workman. It 95 is very rapid in its operation, and its use enables one operator to make not only a very much greater number but also very much better cigar-bunches than by hand, so that labor is saved and the quality of the product is im- 100 proved.

On the 13th day of February, 1885, I filed an application, Serial No. 155,842, for certain improvements on this class of cigar-bunching machines, and I hereby disclaim any subject- 105 matter claimed in said case, to which reference is hereby made for the purposes of this disclaimer.

What I claim as my invention, and desire to secure by Letters Patent, is— 110

1. In a machine for forming cigar-bunches, the combination of a curved oscillating forming-plate with a forming-roll past which the forming-plate vibrates, a slack belt extending 115 over the surface of the same and over the roll, so as to form a bight or loop for receiving the tobacco between them, an ejector which vibrates with the oscillating plate, and mechanism for moving the ejector, substantially as and for the purposes specified. 120

2. In a machine for forming cigar-bunches, the combination, with a forming-roll and slack belt, of a curved oscillating forming-plate loosely journaled on its shaft, a shaft having a crank-arm, a lever pivoted on the frame of 125 the oscillating forming-plate, a link which connects the lever with the crank-arm of the shaft, an ejector actuated from the shaft, and mechanism for reversing the movement of the oscillating forming-plate when released, sub- 130 stantially as and for the purposes specified.

3. The combination of the curved oscillating forming-plate and forming-belt, with a shelf or ledge for receiving the bunch when

discharged from the forming-belt, and a cross-bar, with mechanism for reciprocating it to eject the bunch from the ledge, substantially as and for the purposes described.

5 4. In a cigar-bunching machine, the combination, with a forming-roll and slack belt, of an oscillating forming-plate, a reciprocating ejector which vibrates with the plate, a sliding mold, and a shaft having crank-arms from
10 which the plate, ejector, and mold are actuated, substantially as and for the purposes specified.

5 5. In a machine for bunching cigars, the combination, with bunching mechanism, of
15 the sliding mold, pivoted spring-levers, a tension-plate actuated by the spring-levers and arranged to bear on one edge of the sliding mold and a pawl actuated from the bunching mechanism for moving the mold, substantially
20 as and for the purposes specified.

6. The oscillating forming plate and its re-

ceiving-ledge, in combination with an inclined mold and a reciprocating ejector, f^2 , arranged under the forming-plate for transferring the bunch from the bunching mechanism to the
25 mold-cavity, substantially as and for the purposes described.

7. In a cigar-bunching machine, the combination, with the forming-roll and oscillating forming-plate, of an endless band or slack
30 belt and the longitudinally-slotted grip or clamp-roller provided with a clamp-screw which permits the shifting or adjustment of the belt to compensate for wear, substantially
as and for the purposes specified. 35

In testimony whereof I have hereunto set my hand this 30th day of August, A. D. 1884.

WILLIAM M. STEINLE.

Witnesses:

THOS. LIGGETT,

THOMAS B. KERR.